

In re Patent Application of
KAUSHIK ET AL.
Serial No. 10/662,952
Filed: SEPTEMBER 12, 2003

REMARKS

Applicants thank the Examiner for the careful and thorough examination of the present application. By this amendment, the specification has been amended to eliminate the minor informalities noted by the Examiner, the independent claims have been amended to eliminate minor informalities contained therein and to further define the present invention. Claims 1-17 remain pending in the application. Favorable reconsideration is respectfully requested.

I. The Invention

As shown in FIGS. , for example, the disclosed invention is directed to a CMOS output buffer that uses feedback from a node to reduce voltage bounce by utilizing a tolerable voltage bounce limit, making it less sensitive to operating conditions and processing parameters. An input to the NMOS device of the output buffer is provided by the output of a control element which receives a first input from a pre-driver and a second input (i.e., the feedback) from the voltage node.

II. The Claims are Patentable

Claims 1-5, 7, 12 and 14-17 were rejected as allegedly being indefinite for the reasons set forth on page 2 and 3 of the Office Action. Applicants direct the Examiner to pages 8 and 9 of the present specification (referring to FIG. 7) which clearly describe the control signal NIN3 coming from the predriver 102 to line CC, via AND gate A1 (along with control bit CB), and to the drain of transistor N3. As further

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described on pages 9-12 of the specification, transistors N3 and N4 of the control circuit 101 control the output switch/transistor N2 of the output circuit. Accordingly, it should be clear to the Examiner and those skilled in the art that correcting stage monitors a supply voltage of at least one of the supply voltage terminals in view of the control signal, as claimed.

Furthermore, Applicants point out that the Examiner's focus during examination of claims for compliance with the requirement for definiteness of 35 U.S.C. §112, second paragraph should be whether the claim meets the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available. Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the Examiner might desire. Examiners should not reject claims or insist on their own preferences if other modes of expression selected by Applicants satisfy the statutory requirement.

As the Examiner is aware, the essential inquiry pertaining to this requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of: (A) The content of the particular application disclosure; (B) The teachings of the prior art; and (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. If the scope of the invention sought to be

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patented can be determined from the language of the claims with a reasonable degree of certainty, a rejection of the claims under 35 U.S.C. §112, second paragraph is not appropriate.

Accordingly, Applicants believe that Claims 1-17 meet the statutory requirements of 35 U.S.C. §112, second paragraph.

Claims 1-17 were rejected in view of Taylor et al. (U.S. 4,862,018), Martin et al. (U.S. 5,153,457) and van Bavel et al. (U.S. 6,566,904) taken alone or in various combinations for the reasons set forth on pages 3-6 of the Office Action. Applicants contend that Claims 1-17 clearly define over the cited references, and in view of the following remarks, favorable reconsideration of the rejections is requested.

Each of the independent Claims 1, 6, 11 and 13 now sets forth that the correcting stage includes a first feedback switch connected between the output driver stage (i.e. receiving the control signal) and the controllable output switch/transistor, an inverter connected between the voltage terminal and a control terminal of the first feedback switch, the inverter having a trip point controlled by the voltage on the voltage terminal, and a second feedback switch connected between the voltage terminal and the controllable output switch/transistor. Thus, as can be seen, slew control is not only controlled by the second feedback switch but also by disabling the predriver control signal to the controllable output switch via the first feedback switch.

It is these combinations of features which are not

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fairly taught or suggested in the cited references and which patentably define over the cited references.

The Taylor patent is directed to high current capacity output drivers for digital devices that have output noise reduced and stability achieved by the insertion of resistance in series with inherent, parasitic inductance. The resistance may be one or more fixed resistances formed in the same circuit as the drivers. The resistance may also include sensor devices that selectively increase the resistance of the output drivers in accordance with the voltage produced by the parasitic inductors. Both fixed resistances and sensor devices may be used together.

The Martin patent is directed to an output buffer which includes a voltage supply line for providing a desired voltage level. Drive control circuitry generates a control signal on a control signal node responsive to an input. Output circuitry pulls an output node towards the voltage level responsive to the control signal. Current transient control circuitry coupled to the drive control circuitry detects a voltage spike on the voltage supply line and varies the control signal responsive thereto.

The van Bavel patent is not directed to reducing voltage bounce but was cited by the Examiner to show output switches sized in a binary weighted sequence.

Firstly, Applicants note that neither Taylor nor Martin disclose or teach the use of a correcting stage including a first feedback switch connected between the output driver stage (i.e. receiving the control signal) and the controllable output switch/transistor, an inverter connected

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between the voltage terminal and a control terminal of the first feedback switch, the inverter having a trip point controlled by the voltage on the voltage terminal, and a second feedback switch connected between the voltage terminal and the controllable output switch/transistor, as claimed. Indeed slew control is not controlled in Taylor or Martin by a second feedback switch and also by disabling the predriver control signal to the controllable output switch via a first feedback switch.

As the Examiner is aware, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the claim. Furthermore, to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim features.

There is simply no teaching or suggestion in the cited references to provide the combination of features as claimed. Accordingly, for at least the reasons given above, Applicants maintain that the cited references do not disclose or fairly suggest the invention as set forth in Claims 1, 6, 11 and 13. Furthermore, no proper modification of the teachings of these references could result in the invention as claimed. Thus, the rejections should be withdrawn.

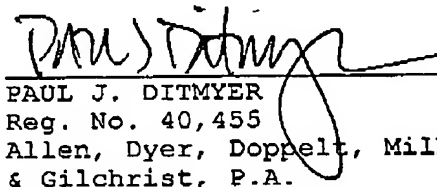
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It is submitted that the independent claims are patentable over the prior art. In view of the patentability of the independent claims, it is submitted that their dependent claims, which recite yet further distinguishing features are also patentable over the cited references for at least the reasons set forth above. Accordingly, these dependent claims require no further discussion herein.

III. Conclusion

In view of the foregoing remarks, it is respectfully submitted that the present application is in condition for allowance. An early notice thereof is earnestly solicited. If, after reviewing this Response, there are any remaining informalities which need to be resolved before the application can be passed to issue, the Examiner is invited and respectfully requested to contact the undersigned by telephone to resolve such informalities.

Respectfully submitted,



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CERTIFICATE OF FACSIMILE TRANSMISSION

I HEREBY CERTIFY that the foregoing correspondence has
been forwarded via facsimile number 703-872-9306 to the
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1450 this 13th day of August, 2004.

